VOLUME XXXI

INDEX OF SUBJECTS AND AUTHORS

Only main topics are listed, and reference is given to the first page of each paper in which they are discussed

adrenal abnormalities, in mice, 157
alcohol dehydrogenase, 97, 107
allotype specificity, 209, 265
allyl alcohol selection, 107
α_2-macroglobulin, 209, 265
amoeba, nuclear cycle, 1
anal glands, of mice, 157
anaphase bridges, 187
Andrews, Kathryn M., 177
asebia locus, in mice, 53
Aspergillus nidulans
  duplication strains, 29
  meiotic recombination, 29
  parasexual cycle, 131
Aspergillus niger
  parasexual cycle, 131
Avery, P. J., 239

bacteriophage pf16, 93
balancing selection, 227
Batty, Jennifer, 303
Béládi, I., 197
β-lipoprotein, 209
Bijlsma, R., 227
blastoderm, of *Drosophila*, 273
body weight, selection, 287
Broda, P., 167
bromodeoxyuridine suicide, 1

Carmi, Pheya, 215
Cheng, David S. K., 107
chiasma, 47
chromosome breakage, 187
clitoral glands, of mice, 157
clonality, between different chromosomes, 13
collagen, structure in mice, 53
Collins, J. F., 157
colour blindness, natural selection, 203
Coprinces, meiosis, 215
coumarin, metabolism in mice, 177
cyclic AMP, in development, 53
cyclic GMP, in development, 53
cyclical selection, 67
cytochrome P450 isozymes, 177
cytodifferentiation, in mice, 157
cytoplasmic inheritance, 131

Dee, Jennifer, 85
degeneration, of hair follicles, 145
Delhi frog, 103
dermis, development in mice, 53
determination, in *Drosophila*, 273
diploids, partial, 29
disequilibrium, linkage, 227, 239
disequilibrium, epistatic, 227, 239
DNA, intercalation, 197
DNA, premeiotic replication, 215
dominance, effect on polymorphism, 67
Drosophila
  alcohol dehydrogenase, 107
  aldehyde oxidase, 107
  appearance of recessive genes, 255
  blastoderm, 273
  determination, 273
  gynadromorph mosaics, 273
  imaginal progenitor cells, 273
  male recombination, 187
  recombination, 29
  rosy locus, 107
  somatic recombination, 273
Drosophila melanogaster
  alcohol dehydrogenase, 97
  allele interactions, 227
  anaphase bridges, 187
  balancing selection, 227
  chromosomal abnormalities, 187
  cytoplasmic effects, 187
  G6PD polymorphism, 227
  inversion frequencies, 97
  male recombination, 187
  6PGD polymorphism, 227
Drosophila persimilus
  chromosome polymorphisms, 97
  phosphoglucomutase isoalleles, 97
Drosophila pseudoobscura
  polymorphisms, 97
Dunn, N. W., 93
duplication strains, 29

effective pairing hypothesis, 29
epistasis, 227
Escherichia coli
  lon mutations, 197

mating aggregates, 167
multiple parental matings, 167
plasmid curing, 197
R-factor tetracycline resistance, 75
7-ethoxycoumarine, metabolism in mice, 177
exconjugant complexity in *E. coli*, 167

Falconer, D. S., 287
fitness, effects of allele interactions, 227
Freeling, Michael, 107

Gauld, I. K., 287
gene arrangements, 13
gene frequency changes, 103
gene number variations, 13
genetic drift, 103
Gionfriddo, Maria A., 97
glucocorticoids, in development, 53
glycoprotein, serum antigen, 209
Grewal, Manjit Singh, 103

hair follicles, of mice, 145
haploid populations, polymorphisms, 67
Hardy, Margaret H., 53, 145, 157
Harkiss, G. D., 303
Haugli, Finn, 1
Haugli, Kari, 1
Heale, James B., 131
heat sensitivity, in *Physarum*, 1
Hoekstra, Rolf F., 67
Holland, I. B., 197
hydroxyurea, induction of meiosis, 215

Iannelli, Domenico, 209, 265
imaginal progenitor cells, 273
imipramine, 197
immunogenetics, of cattle, 265
immunogenetics, of sheep, 209
immunoglobulins, gene arrangements, 13
infinite population assumptions, 239
interference, between tetrads, 47
interference, within tetrads, 47

Jansen, G. J. O., 47
Josefowicz, Wendy J., 53, 145, 157

King, David G., 273
Klebsiella, R-factors, 75
Koltin, Y., 215

low-density lipoprotein allotypes, 265
Lilium, meiosis, 215
Lush, I. E., 177
lysosomes, in mice, 157

maize
alcohol dehydrogenase mutants, 107
allyl alcohol selection, 107
mutagenesis, 107
pollen selection, 107
Malhotra, K. C., 203
Masina, Piero, 265
mating aggregates, in *E. coli*, 167
meibomian glands, of mice, 157
meiosis
in *Coprinus*, 215
in *Lilium*, 215
in *Schizophyllum*, 215
meiotic recombination, 29
meiotic synchrony induction, 215
metabolic rates, of mice, 303
methylene blue, in plasmid curing, 197
4-methylumbelliferone, 177
mitochondria, abnormalities in mice, 157
mitosis, DNA replication, 215
Molnár, J., 197
mouse
adrenal abnormalities, 157
albino, 53
anal glands, 157
asebia locus, 53, 145, 157
body weight selection, 287
chinchilla locus, 53
clitoral glands, 157
collagen structure, 53
coumarine metabolism, 177
cytochrome P450 isozymes, 177
dermis, 53
elastin structure, 53
epidermis, 53
hair follicles, 147
hairless locus, 53
meibomian gland, 157
membranes, 157
metabolic rates, 303
4-methyl umbelliferone excretion, 177
mitochondria, 157
organ cell number, 287
organ cell size, 287
ovarian abnormalities, 157
preputial gland, 157
sebaceous gland, 53, 145, 157
thyroxine levels, 303
umbelliferone excretion, 177
multigene families, 13
multi-niche selection, 67
multiple locus systems, 227
Mus musculus, see under Mouse

natural selection, for colour blindness, 203
netropsin suicide, 1
nuclear cycle, in amoebae, 1

Ohta, Tomoko, 13

organ cell number, 287
organ cell size, 287
ovarian abnormalities, in mice, 157
overdominance, 239
Ovis aries, immunogenetics, 157

parasexual cycle, of *Verticillium*, 131
Physarum polycephalum
  heat sensitivity, 1
  mating type locus, 85
  mutagenesis, 1
  rac locus, 85
plasma thyroxine levels, 303
plasmid (see also under R-factor)
  curing by imipramine, 197
  pND3, 93
  TOL, 93
  transductional shortening, 93
pole cells, of *Drosophila*, 273
pollen selection, 107
polymorphism
  cyclical selection, 67
  dominance effects, 67
  haploid populations, 67
  multi-niche systems, 67
  subdivided populations, 67
population size effects, 239
preputial glands, of mice, 157
Pseudomonas putida
  bacteriophage pf16, 93
  plasmids, 93

R-factor
  R6, 75
  R46, 75
  R57, 75
  R91, 93
  R100, 75
  R199, 75
  RP1, 75
  tetracycline resistance, 75
Rana cyanophilictis
  genetic drift, 103
  skeletal polymorphism, 103
recombination, in fungi, 29
recombination, in partial diploids, 29
Reeve, E. C. R., 75
ribosomal RNA genes, 13
Roberts, R. C., 287
Robertson, Alan, 255

sebaceous glands, of mice, 53, 145, 157
serum antigen immunogenetics, 209, 265
skin development, in mice, 57
somatic recombination, 273
Stamberg, Judith, 215
Stewart, A. D., 303
Stum, P., 47
Sudbery, Peter, 1

tetracycline resistance, 75
tetrad interference, 47
tetraparental matings, in *E. coli*, 167
thyroxine levels, in mice, 303
transfer RNA genes, 13
transposon Tn 10, 75
Typas, Milton A., 131

umbelliferone excretion, by mice, 177
unequal crossing over, 13

Van de Vate, C., 29, 47
Verticillium spp.
  cytoplasmic inheritance, 131
  hyl locus segregation, 131
  parasexual cycle, 131
Vigue, Charles L., 97

White, G. P., 93
Wyman, Robert J., 273

Yannopoulos, George, 187
Yeast, recombination, 29

INDEX

MI

INDEX

GENETICAL RESEARCH

EDITORIAL BOARD
CHARLOTTE AUERBACH W. HAYES
R. H. PRITCHARD MARY F. LYON R. RILEY A. ROBERTSON

EXECUTIVE EDITOR
E. C. R. REEVE

ASSISTANT EXECUTIVE EDITOR
N. S. WILLETTS

Volume 31. 1978

CAMBRIDGE UNIVERSITY PRESS
CAMBRIDGE · LONDON · NEW YORK

PUBLISHED BY
THE SYNDICS OF THE CAMBRIDGE UNIVERSITY PRESS

The Pitt Building, Trumpington Street, Cambridge CB2 1RP
Bentley House, P.O. Box 92, 200 Euston Road, London NW1 2DB
32 East 57th Street, New York, N.Y. 10022

© Cambridge University Press, 1978

Printed in Great Britain at the University Press, Cambridge

CONTENTS

No. 1 (February 1978)

SUDBERY, P., HAUGLI, K. and HAUGLI, F. Enrichment and screening of heat-sensitive mutants of *Physarum polycephalum* *page* 1

OHTA, T. Theoretical study on genetic variation in multigene families 13

VAN DE VATE, C. and JANSEN, G. J. O. Meiotic recombination in a duplication strain of *Aspergillus nidulans* 29

JOSEFOWICZ, W. J. and HARDY, M. H. The expression of the gene *asebia* in the laboratory mouse. I. Epidermis and dermis 53

HOEKSTRA, R. F. Sufficient conditions for polymorphism with cyclical selection in a subdivided population 67

REEVE, E. C. R. Evidence that there are two types of determinant for tetracycline resistance among R-factors 75

DEE, J. A gene unlinked to mating-type affecting crossing between strains of *Physarum polycephalum* 85

SHORT PAPERS

WHITE, G. P. and DUNN, N. W. Evidence for transductional shortening of the plasmid obtained by recombination between the TOL catabolic plasmid and the R91 R plasmid 93

GIONFRIDDO, M. A. and VIGUE, C. L. Drosophila alcohol dehydrogenase frequencies and temperature 97

No. 2 (April 1978)

GREWAL, MANJIT SINGH. Skeletal polymorphism and genetic drift in a Delhi frog, *Rana cyanophlictis* – a follow-up study 103

FREELING, MICHAEL and CHENG, DAVID S. K. Radiation-induced *alcohol dehydrogenase* mutants in maize following allyl alcohol selection of pollen 107

TYPAS, MILTON A. and HEALE, JAMES B. Heterozygous diploid analyses via the parasexual cycle and a cytoplasmic pattern of inheritance in *Verticillium* spp. 131

JOSEFOWICZ, WENDY J. and HARDY, MARGARET H. The expression of the gene *asebia* in the laboratory mouse. 2. Hair follicles 145

JOSEFOWICZ, WENDY J. and HARDY, MARGARET H. The expression of the gene *asebia* in the laboratory mouse. 3. Sebaceous glands 157

BRODA, PAUL and COLLINS, J. F. Role of simple and complex aggregates in *Escherichia coli* Hfr × F^- matings 167

Lush, I. E. and Andrews, Kathryn M. Genetic variation between mice in their metabolism of coumarin and its derivatives 177

Yannopoulos, George. Studies on male recombination in a Southern Greek *Drosophila melanogaster* population 187

Molnár, J., Béládie, E. and Holland, I. B. The plasmid curing action of imipramine in *Escherichia coli* K12 197

Malhotra, K. C. Natural selection and colour blindness: fresh data on Indian castes 203

No. 3 (June 1978)

Iannelli, Domenico. Immunogenetics of a sheep (*Ovis aries*) serum antigen 209

Carmi, Pheya, Koltin, Y. and Stamberg, Judith. Meiosis in *Schizophyllum commune*: premeiotic DNA replication and meiotic synchrony induced with hydroxyurea 215

Bijlsma, R. Polymorphism at the G6PD and 6PGD loci in *Drosophila melanogaster*. II. Evidence for interaction in fitness 227

Avery P. J. The effect of finite population size on models of linked overdominant loci 239

Robertson, Alan. The time of detection of recessive visible genes in small populations 255

Iannelli, Domenico and Masina, Piero. Immunogenetics of a macroglobulin allotype in cattle 265

Wyman, Robert J. and King, David G. On the dispersion of imaginal progenitor cells in the *Drosophila* blastoderm 273

Falconer, D. S., Gauld, I. K. and Roberts, R. C. Cell numbers and cell sizes in organs of mice selected for large and small body size 287

Short Paper

Stewart, A. D., Batty, Jennifer and Harkiss, G. D. Genetic variation in plasma thyroxine levels and minimal metabolic rates of the mouse, *Mus musculus* 303

Books Received 307

Index 309

VOLUME XXXII

INDEX OF SUBJECTS AND AUTHORS

Only main topics are listed, and reference is given to the first page of each paper in which they are discussed

abortive lysogeny, 273
α-D-N-acetylglucosaminidase, in mouse, 183
β-D-N-acetylglucosaminidase, in mouse, 183
acriflavine, effects in DNA repair, 19
Al-Murrani, W. K., 299
albino alleles, in mouse, 1
Anderson, Janice R., 135
anencephaly, in mouse, 135
antagonistic phenomena, 55
Apis pura
  polymorphisms, 47
Archer, J. R., 79
Archer, James R., 183
Ascobolus immersus
  gene conversion, 67
  w loci, 67
Aspergillus nidulans
  choline locus, 309
assortative mating, in Ichneumonidae, 47

bacteriophage
  λ, 273
  pf16, 251
  PR4, 207
  sex specific, 207
Bainbridge, Brian W., 309
Barlow, J. A., 37
Beatty, R. A., 9
bentazone resistance in *Nicotiana*, 85
Bjerkandera adusta
  antagonistic phenomena, 55
blastocyst, triploid, 9
body size selection, in mouse, 299
Bombus americanorum
  polymorphism, 47
Bregliano, J. C., 259
Bucheton, A., 259

caffeine, effects on DNA repair, 19
Campbell, J. H., 273
Campbell, R. B., 151
Campostoma anomalum
  karyotype evolution, 37
Carlson, Peter S., 85
catabolic plasmids, 207, 251
Chapman, Verne M., 91
choline metabolism, 309
chromosomal evolution, 37
chromosome contamination, 113
conjugative plasmids, 25
Coriolus versicolor
  genetic structure, 55
Coulter, V. J., 9
courtship behaviour, in *Drosophila*, 231
p-cresol degradation, 251
cyprinid fishes, evolution, 37

Deal F. H., 37
deletion mapping, in mouse, 1
Diadromus pulchellus
  polymorphisms, 47
diapause, in *Lymantria dispar*, 129
digynic triploidy, in rabbits, 9
diploids, ratchet mechanisms, 293
DNA polymerase, 25
DNA repair, 19
Drosophila melanogaster
  behaviour in mazes, 231
  courtship, 231
  female lethal mutations, 103
  female sterility, 113, 259
  fractional mutations, 19
  gene dosage effects, 103
  hybrid dysgenesis, 259
  insertion elements, 113
  laterality, 231
  linkage disequilibrium, 215
  male mating advantage, 123
  male recombination, 241
  mutation, 259
  ovary atrophication, 241
  transformer locus, 103
Drosophila pseudoobscura
  male mating advantage, 123
Dunn, H. M., 251
Dunn, N. W., 207, 251
dwarfism, in mouse, 195
Dykhuizen, D., 273
dysgenesis, 259

Ehrman, Lee, 231
Eicher, Eva M., 1
erythromycin resistance, 171

Escherichia coli
bacteriophage, 207, 273
DNA polymerase I, 25
lysogeny, 273
plasmids, 25, 207, 251, 273
Evans, I. H., 171
exencephaly, in mouse, 135

Falconer, D. S., 195
female lethal locus, in *Drosophila*, 103
Formes cojanderi
antagonistic phenomena, 55
Formica sp., polymorphisms, 47
fractional mutations, 19
α-L-fucosidase, in mouse, 183
α-D-galactosidase, in mouse, 183
β-D-galactosidase, in mouse, 183

gene conversion, control, 67
gene dosage effects, 103
gene rearrangement, 37
generalized symmetric selection, 151
Gluecksohn-Waelsch, Salome, 1
glycosidase, in mouse, 183
Gold, J. R., 37
growth hormone, in mouse, 195
gypsy moth, see *Lymantria*, 129

Heller, R., 293
Helmi, S., 67
heritability, 281
Hewetson, L., 251
β-D-hexoaminidase, in mouse, 183
Hill, William S., 281
Hisey, Brent N., 231
Hoy, Marjorie A., 129
Hyboganthus layi
karyotype evolution, 37
Hybopsis aestivalis
karyotype evolution, 37
Hybrid DNA, asymmetrical, 67
hymenoptera, polymorphisms, 47
hypopituitary dwarfism, 195

Ichneumonidae, polymorphisms, 47
infertility, in mouse, 79
inhibition of repair, 19
insertion elements, in *Drosophila*, 113

Johnson, F. M., 215

Karlin, Samuel, 151
karyotype evolution, 37
Kidwell, M. S., 259
Knights, P. J., 135

Lamb, B. C., 67
Langley, Charles H., 215
Lasioglossum zephyrum
polymorphisms, 47
laterality, in *Drosophila* sp., 231
linkage disequilibrium, 215
Lorkiewicz, Zbigniew, 319
Lymantria dispar
diapause, genetic bases, 129
Lynch, Carol Becker, 129
lysogeny, 273

male mating advantage, in *Drosophila*, 123
male recombination, in *Drosophila*, 241
malic enzyme, mitochondrial, 1
Mandel, S. K., 19
α-D-mannosidase, in mouse, 183
Markham, Paul, 309
Markow, Therese A., 123
Marshall, Terri, 103
maternal effects, in mouse, 299
maze behaviour, in *Drosophila*, 231
migration, effects on polymorphisms, 151
misrepair of DNA, 67
mitochondria, malic enzyme, 1
mitomycin C, 251
mosaics, X-chromosome, 91
Mukherjee, A. S., 19
Muller's ratchet, 293
multi-deme populations, 151
multi-locus selection, 151
Mus musculus
albino alleles, 1
body size, 299
curly tail, 135
exencephaly, 135
glucosidase, 183
growth hormone, 195
hypopituitary dwarfism, 195
infertility, 79
liver enzymes, 183
malic enzyme, 1
maternal effects, 299
mitochondria, 1
phosphoglycerate kinase, 91
pseudencephaly, 135
spermatozoal enzymes, 183
spina bifida, 135
t-complex, 79
mutator genes, 171

negative heterosis, 47
Neurospora crassa
choline metabolism, 309
gene conversion, 67
Nicotiana tabacum
herbicide tolerance, 85
nitrogen fixation, 319

nodulation, 319
non-dysjunction, 259
non-epistatic selection, 151
non-mendelian inheritance, 113, 259
Notropis umbratilis
  karyotype evolution, 37

oligomycin resistance, 171
Oryctolagus cunniculus
  digynic triploidy, 9
ovary atrophication, in *Drosophila*, 241

Pasteur, Nicole, 47
Pélisson, A., 113, 259
penetrance, 135
Perelle, Ira, 231
petite mutants, of yeast, 171
Phaeolus schweinitzii
  antagonistic phenomena, 55
Phenacobius mirabilis
  karyotype evolution, 37
phenmedipharm resistance, 85
phosphoglycerate kinase polymorphism, 91
Picard, G., 259
Pidduck, Heather G., 195
Pimephales vigilax
  karyotype evolution, 37
plasmid
  copy number, 25
  NAH, 207
  nodulation controlling, 319
  pND2, 207
  RZ, 207
  R6K, 25
  TOC, 207
Pogonomyrnex sp., polymorphisms, 47
population cages, size effects, 215
post-natal maternal effects, 299
procatechuate degradation, 251
pseudencephaly, in mouse, 135
Pseudomonas aeroginosa
  plasmids, 25, 207, 251
Pseudomonas putida
  plasmids, 207

rabbit, see *Oryctolagus*
Radin, David N., 85
ratchet mechanisms, 293
Rayner, A. D. M., 55
recombination, 293
repair synthesis, 19
replication of DNA, 25
rex mutations of phage λ, 273
Rhizobium trifolii
  non-nodulating mutants, 319
  plasmids, 319
Richardsonius egregius
  karyotype evolution, 37
Roberts, R. C., 299
Rojas-Rousse, Danielle, 47
Rolfe, B. S., 273

Saccharomyces cerevisiae
  mutator genes, 171
  petite mutants, 171
Schizophyllum
  gene conversion, 67
Self, Steven J., 79, 183
selfing, 293
Shaumar, Nagat, 47
Smith, Diana B., 215
Smith, J. Maynard, 293
Smith, J. T., 25
Solenopsis sp., male gene inactivation, 47
speciation, 37
spermatocytes, mutagenesis, 19
spina bifida, in mouse, 135

t-complex, of mouse, 79
Thompson, James N., 231
tobacco, see *Nicotiana*
Todd, N. K., 55
transformer locus, in *Drosophila*, 103
Turchin, Howard A., 1
Tweats, D. J., 25

Wallace, Margaret E., 135
West, John D., 91
White, G. P., 207
Whittle, J. R. S., 103
Wilkie, D., 171
Winchester, B. S., 79, 183
Womax, W. D., 37

X-ray mutagenesis, 1, 19

Yannopoulus, George, 241
yeast, see *Saccharomyces*, 171

Zurkowski, Witold, 319

INDEX